

APPENDIX A

CLAIM LANGUAGE	NORRIS	WEIGL	SMIEDT	PALMER
1. A method of enabling and disabling a motor vehicle in response to payments being timely made, comprising the steps of:	Automobiles and trucks are disclosed at col. 1, lines 43-45. Fig. 2 discloses Relay 13 for enabling and disabling equipment such as a motor vehicle. Col. 5, lines 47-49 discloses the provision of valid activation codes when payments are current.	Fig. 1 shows a vehicle limiting and disabling device, used with a method as in Fig. 2. Col. 4, lines 4-5 (Weigl PCT, page 7, line 36-page 8, line 2) disclose limiting length of use for rental vehicles. New release information is entered when available (and stored as "old release information" for subsequent checks), e.g. a new amount of time (or travel distance) allowed for the vehicle, and the vehicle's use parameter is reset to zero. Col. 3, lines 36-48 (Weigl PCT, page 6, line 31-page 7, line 9).	Use with motor vehicles purchased through a payment agreement over a period of time is described at col. 1, lines 48-54. Disablement of the "host device" is described at col. 6, lines 48-54. <i>See also</i> col. 7, lines 6-16 which describes use with a vehicle. <i>Also see</i> Claim 1 which describes rendering inoperable "[e]quipment having electronic circuitry."	The Palmer patent discloses the control of "rental appliances" and cites to Green (U.S. 4,624,578). As explained in its Field of Invention, Green relates to "a system which permits operation of rental equipment only during the period for which rent has been paid." The control of rental appliances is an art analogous to the control of motor vehicles. <i>See</i> '648. Applicant's citation to Green during prosecution, as well as the citation to Green in Norris.
1(a) computing a payment due deadline of a loan agreement for said motor vehicle;	A microprocessor is disclosed that "is programmed to compare the current time, as stored in the clock counter, with an expiration time of a lease or installment sale period." That expiration time is a payment due deadline. <i>See</i> col. 2, lines 44-56; and col. 5, lines	In step 105 of Fig. 2, it is determined whether a predetermined maximum value has been reached, which can be a length of time in the case of a rental vehicle. Col. 3, lines 54-59 and col. 4, lines 17-22 and page 7, line 36-page 8, line 2).	Programming of the device with loan parameters is described at col. 5, lines 1-20. The use of those data and a real-time clock to compute "monthly intervals" which correspond to the payment due dates is described at col. 6, lines 5-7 and at col. 6, lines 25-48.	The performance of this step is shown at col. 5, line 47- col. 6, line 7.
1(b) generating a reference code which	A memory is disclosed into which is stored "a series of	Maximum value used in test of step 105 (see Fig. 2) is a reference	The use of an algorithm to generate a sequence	The performance of this step is shown at col. 6, lines

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corresponds to said deadline;	activation codes." Loading that memory involves the generation of a set of reference codes. <i>See</i> col. 2, lines 39-41; col. 5, lines 30-34; and col. 6, lines 51-55.	code corresponding to a maximum accrued time, in the case of a rental vehicle. Col., 3, lines 54-59 and col. 4, lines 4-5 (Weigl PCT, page 7, lines 17-22 and page 7, line 36-page 8, line 2). The vehicle use parameter is another reference code corresponding to the deadline -- in particular, corresponding to progress towards the deadline.	of reference codes (the "pseudo-random numbers" created by the "crypto unit") is described at col. 6, lines 33-44. Each of those numbers corresponds to a specific payment due deadline. <i>Also see</i> col. 4, lines 5-9.	8-18.
1(c) providing said reference code to a comparator via a computer interface;	The provision of the reference codes to the comparator is described at Fig. 2, col. 2, lines 39-41; at col. 4, lines 64-66; col. 5, lines 11-12 and 30-34; and col. 6, lines 51-55.	Both the maximum value and the vehicle use parameter (which measures how closely the maximum value has been reached) are provided to the blocking control device 30 (Fig. 1), which checks (i.e. compares) whether the predetermined operating time has exceeded the maximum value, i.e. compares these values. Col. 3, lines 54-59 and col. 4, lines 25-34 ((Weigl PCT, page 7, lines 17-22 and page 8, lines 24-34); and see Fig. 2, step 105. Thus, the blocking control device thus necessarily includes a comparator (not separately shown) to execute this comparison. The maximum value is provided over a serial transmission path 22 (shown in Figs. 1 and 5; see col. 2,	The provision of the reference codes to the comparator is described at col. 6, lines 33-47.	The performance of this step is shown at col. 5, lines 47-52 and col. 6, lines 8-18.

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		lines 52-53 and col. 6, line 32). The vehicle use parameter is provided over a bus (not numbered) leading from device 32 to blocking control device 30 (Fig. 1). The blocking control device 30 uses digital logic (see col. 6, lines 48-67), and is thus a computer, and the interface 22 is a computer interface.		
1(d) receiving an additional code, via a keypad, from a user;	An additional code is received from Keypad 2. See Fig. 2; col. 2, lines 60-64; col. 4, line 66-col. 5, line 11; and col. 5, lines 47-67.	The card reading/recording station 10 (Fig. 1) receives release information (i.e. a code). The code card system 10-20 of Fig. 1 can be used in conjunction with a home computer system to enter the release information. Col. 5, lines 36-43. A keypad is not explicitly mentioned for entry of this code into station 10, but home computers universally use numerical keypads for entry of numbers, as for example keyboard 33 in Fig. 1.	The use of a keypad to enter a number into the device is described at col. 5, lines 21-26 and at col. 6, lines 15-17.	In Palmer the additional code is provided by as punched card, but according to the examiner of the Norris patent, as stated on page 5 of an Office Action dated 3/28/95 in the Norris prosecution, with reference to Palmer's use of a punched card vis-à-vis Norris's use of a keypad to enter codes that "because these two forms of input means were well-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute a keyboard for a card reader ... for the purpose of inputting access codes in a[n] access control system..."

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1(e) passing said additional code to said comparator;	A comparator is shown in Fig. 2. It receives the "activation code" from the keypad. See col. 4, line 66 - col. 5, line 11; and col. 5, lines 41-43; and col. 6, lines 1-6.	Both the release information and the vehicle use parameter are passed to the blocking control device. See Fig. 1 and col. 3, lines 26-28 and 46-48 (Weigl PCT, page 6, lines 19-21 and page 7, lines 7-9).	The passage of the user-entered number to the comparator is described at col. 6, lines 15-47.	The performance of this step is described in elements (c) and (d) of Claim 1. Also see col. 8, lines 21-26.
1(f) comparing said additional code with said reference code;	The microprocessor compares the input code to the currently valid activation code at block 104 of Fig. 3c. See col. 6, lines 1-6; col. 3, lines 40-44; and col. 5, lines 41-43.	Col. 3, lines 54-59 (Weigl PCT, page 7, lines 17-22) describe the check (comparison) between the predetermined maximum value and the vehicle use parameter. See Fig. 2, step 105.	The comparison between the generated reference code and the user-entered number is described at col. 6, lines 44-47.	This step is described in element (d) of Claim 1 and at col. 8, lines 24-28.
1(g) disabling a system which supports causing ignition in an engine of said motor vehicle, if agreement between said additional code and said reference code is not detected prior to said payment due deadline, wherein said system includes only components not dedicated to directly causing a spark to initiate combustion; and	If a valid activation code is not entered by the end of the defined payment interval, Relay 13 is used to disable the associated equipment by opening the connection between Power Supply 10 and that equipment. Operation with a 12 volt power supply (corresponding to a car battery) is described at col. 4, lines 57-59. See col. 3, lines 1-15 and lines 40-44; and col. 6, lines 25-34. Claim 1 describes the control of "an electrical device." This teaches controlling any electrical	If the comparison at step 105 of Fig. 2 determines that the maximum vehicle use parameter has been reached, and new release information has not been received, then the blocking control device 30 limits the use of the vehicle but does not prevent ignition. See steps 102-106 in Fig. 2, and col. 4, lines 12-22 (Weigl PCT, page 8, lines 11-20). Ignition is not explicitly mentioned, but limiting rotational speed of the motor is specified via a rotational speed limiter, and the Staerzl patent makes it clear that it is the ignition system that controls engine speed. In addition, "ignition" is broadly defined in the Simon patent as "the	Disablement of the "host device" is disclosed at col. 6, lines 48-53. Disablement by using a "Cut-out Device" (26) is described in Fig. 1 and col. 6, lines 5-10. See Claim 1 and col. 5, lines 1-20 for discussion of rendering inoperable equipment having electronic circuitry (<i>also see</i> the Simon patent's definition of "ignition" that specifically includes "electronics dedicated [to] causing a spark...")	This step is described in element (e) of Claim 1 and at col. 1, lines 57-61 and col. 6, lines 45-49.

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	system in a vehicle.	entire electrical system of a car and all systems which support causing ignition in an engine". Simon, col. 4, lines 6-7. Thus, control of <i>any</i> electrical component of a car in the prior art teaches this feature of a "system which supports causing ignition", even including interruptions due to a faulty fuel pump or door lock. Simon, col. 4, lines 8-16.	(Simon patent, col. 4, lines 8-9).	
1(h) enabling said system if agreement between said additional code and said reference code is detected.	If a valid activation code is entered, relay 13 is used to enable the controlled equipment. See col. 6, lines 6-9; col. 3, lines 40-44; and col. 5, lines 30-34	If the comparison at step 105 of Fig. 2 determines that the maximum vehicle use parameter has not been reached, vehicle operation is enabled as normal.	Enablement ("allowing said equipment to be operated") based on code comparisons is described in Claim 1.	This step is described at col. 6, lines 45-49.
2. A system for enabling and disabling a motor vehicle in response to timely payments being made comprising:	Automobiles and trucks are described at col. 1, lines 43-45; and col. 3, lines 6-44. Relay 13 (Fig. 2) is disclosed for enabling and disabling equipment, which would be applicable to a motor vehicle.	Fig. 1 shows a vehicle limiting and disabling device, used with a method as in Fig. 2. Col. 4, lines 4-5 (Weigl PCT, page 7, line 36-page 8, line 2) disclose limiting length of use for rental vehicles. New release information is entered when available (and stored as "old release information" for subsequent checks), e.g. a new amount of time (or travel distance) allowed for the vehicle, and the vehicle's use parameter is reset to zero. Col. 3, lines 36-48 (Weigl PCT, page 6, line 31-page 7, line 9).	The disclosed system's applicability to motor vehicles purchased through a payment agreement over a period of time is described at col. 1, lines 48-54. Disablement of the "host device" is described at col. 6, lines 48-54. See <i>also</i> col. 7, lines 6-16 which describes use with a vehicle. <i>Also see</i> Claim 1 which describes rendering inoperable	The system of the Palmer patent is disclosed for the control of "rental appliances," but as explained above, the technology of that patent is equally applicable to controlling a motor vehicle.

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2(a) a disabling module connected to a system that supports causing ignition in an engine of said motor vehicle;	See Fig. 2, which discloses that an Activation Relay (13) and Phototransistor (35), which are used for disabling, can be located in a module that is optically coupled to another module. Claim 1 also discloses the control of "an electrical device." The electrical devices contemplated include those used in motor vehicles with engines such as automobiles and trucks. See col. 1, lines 43-45.	Blocking control device 30 can limit and/or disable operation of the vehicle, and is connected to motor control device 31. See Fig. 1 and col. 4, lines 12-33 (Weigl PCT, page 8, lines 11-34). See comments on element 1(g) above, showing that speed control is accomplished via the ignition system.	Disabling of the "host device" is disclosed at col. 6, lines 48-53. Disabling by using a "Cut-out Device" (26) is described in Fig. 1 and col. 6, lines 5-10. That device is described as being inside the system but separate from the "chip 10."	Appliance Access Control Circuit 6f is a disabling element within Access Control Module 6. See col. 4, lines 21-50. Also see the Appliance Control Circuit of Fig. 3. That circuit is described as "The access control circuit 6f can take several configurations depending on the type of appliance to be controlled. For instance, a relay or solid state switch could be used to control the application of AC power to the controlled appliance 5." Those of skill in the art would recognize that a relay can also be used to control DC power such as the power supplied by a car battery.
2(b) a control module in communication with said disabling module; and	See Fig. 2, which discloses that a Microprocessor (1) and Opto-isolator (14), which are used for controlling, can be located in a module that is in communication (optically) with the disabling module	Motor control device 31 communicates with blocking control device 30 via connection 23. See Fig. 1 and col. 2, lines 52-56 (Weigl PCT, page 5, lines 4-9).	See Circuit 10 in the patent's only figure. That "chip" is described as an Application Specific Integrated Circuit (ASIC) which controls the system. See col. 5, lines 59-60.	See Access Control Module 6 of Figs. 1 and 2.

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	that includes Activation Relay (13) and Phototransistor (35).			
2(c) means for periodically receiving a code from a keypad and transmitting said code to said control module,	See Fig. 2 and Col. 5, lines 47-49, which disclose Keypad (2) coupled to an 8-bit I/O port on the microprocessor (33) and used to supply activation codes.	The card reading/recording station 10 (Fig. 1) receives release information (i.e. a code). The code card system 10-20 of Fig. 1 can be used in conjunction with a home computer system to enter the release information. Col. 5, lines 36-43 (Weigl PCT, page 11, lines 8-16). A keypad is not explicitly mentioned for entry of the code into station 10, but home computers universally use numerical keypads for entry of numbers, as for example keyboard 33 in Fig. 1.	See Keypad 32 in the patent's only figure. That keypad is used to enter a "unique series of numbers" for controlling the system. See col. 6, lines 15-16.	See Optical Card Reader 6c of Figs. 1 and 2. As explained above, those of skill will consider use of a card reader or a keypad to be well-recognized equivalents, and the use of a keypad rather than a card reader to be an obvious substitution.
2(d) wherein said control module comprises:				
2(e) a comparator;	See Fig. 2, Comparator (47).	The blocking control device 30 which checks (i.e. compares) whether the predetermined operating time has exceeded the maximum value, i.e. compares these values. Col. 3, lines 54-59 and col. 4, lines 25-34 (Weigl PCT, page 7, lines 17-22 and page	The circuitry in Chip 10 includes a comparator as shown by the following description of its operation: "[e]ach time a new number is entered the crypto unit generates a new	Single Chip Microcomputer 6i includes a comparator.

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2(f) a reference code providing module, said comparator being operable for comparing reference codes with received codes and triggering events in response thereto, and	See EPROM (31) and control programming that increments a data pointer to access the next valid access code stores in series in that memory. The "internal activation codes" read from that EEPROM are compared with the activation codes received from Keypad (2) and the result of that comparison is used to open or close Relay (13). See Fig. 2, and col. 3; lines 31-44.	8, lines 24-34); and see Fig. 2, step 105. Thus, the blocking control device thus necessarily includes a comparator (not separately shown) to execute this comparison. The maximum value used in step 105 (see Fig. 2) is a reference code corresponding to a maximum accrued time. Col. 3, lines 54-59 (Weigl PCT, page 7, lines 17-22). The vehicle use parameter is another reference code corresponding to the deadline -- in particular, corresponding to progress towards the deadline. Both the maximum value and the vehicle use parameter (which measures how closely the maximum value has been approached) are provided to the blocking control device 30 (Fig. 1), which checks whether the predetermined operating time has exceeded the maximum value, i.e. compares these values. Col. 3, lines 54-59 and col. 4, lines 25-34 (Weigl PCT, page 7, lines 17-22 and page 8, lines 24-34); and see Fig. 2, step 105. Thus, the blocking control device necessarily includes a comparator	number, compares it with the number entered and causes an appropriate controlling signal to be produced." See col. 6, lines 44-47. Crypto Unit 36 provides such codes. Its operation is described as "[t]he crypto unit is designed to generate a very long sequence, for example, sixty thousand of pseudo-random numbers based on the algorithm which is stored therein." See col. 6, lines 33-35.	The microcomputer includes a ROM that holds "a look-up table of random access codes." The microprocessor, upon entry of card, accesses the appropriate access code from that table, compares it to the code of the card, and activates or reactivates the controlled equipment. See col. 5, lines 35-38, col. 5, lines 53-59, and col. 6, lines 34-50.

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		(not separately shown) to execute this comparison. The triggered events include limiting use of the vehicle and eventually blocking the motor control device. Col. 4, lines 12-34.		
2(g) said reference code providing module being operable for periodically providing reference codes to said comparator wherein said reference codes correspond to payments which are to be made;	See Clock Counter 46 and the interval comparison step in the disclosed control program (Step 141). <i>Also see</i> col. 1, lines 44-55, col. 2, lines 24-30 and col. 6, lines 35-61.	The vehicle use parameter constitutes a code that is periodically updated and compared against the maximum value (also a reference code), where the maximum value may be a length of time corresponding to the rental agreement. Col. 3, lines 44-48 and 54-59 (Weigl PCT, page 7, lines 2-9 and 17-22); and col. 3, line 67-col. 4, line 5 (Weigl PCT, page 7, line 32-page 8, line 2).	Crypto Unit 36 meets this limitation. Its operation is described as "[e]ach time a new number is entered the crypto unit generates a new number, compares it with the number entered and causes an appropriate controlling signal to be produced." <i>See</i> col. 6, lines 44-47.	The microprocessor performs this function each time a card is inserted, those insertions being linked to each successive rental period. <i>See</i> col. 5, line 66-col. 6, line 7 and col. 6, lines 34-50.
2(h) wherein said disabling module disables the system that supports causing ignition when said code is not in agreement with said reference code before a predetermined time exceeds a predetermined deadline, and	See Fig. 4, Disabling of Equipment at Step 155. <i>Also see</i> col. 6, line 63 - col. 7, line 10.	If it is determined that the maximum vehicle use parameter has been reached, and new release information has not been received, then the blocking control device 30 limits the use of the vehicle but does not prevent ignition. <i>See</i> steps 102-106 in Fig. 2, and col. 4, lines 12-22 (Weigl PCT, page 8, lines 24-34). Ignition is not explicitly mentioned, but limiting rotational speed of the motor is specified via a rotational speed limiter, and the Staerzl patent	The disclosed system meets this limitation. <i>See</i> col. 6, lines 48-53, as, "[t]he controller 24, each time the host device is switched on, checks whether payment has been made for the current period. If no payment has been made and the correct code entered, then a warning is given. As soon as the cut-off date	Appliance Access Control Circuit 6f disables the controlled equipment if a card carrying a code that agrees with the appropriately selected code from the ROM has not been inserted prior to the end of a rental period. <i>See</i> col. 6, lines 34-50.

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		<p>makes it clear that it is the ignition system that controls engine speed. In addition, "ignition" is broadly defined in the Simon patent as "the entire electrical system of a car and all systems which support causing ignition in an engine". Simon, col. 4, lines 6-7. Thus, control of <i>any</i> electrical component of a car in the prior art teaches this feature of a "system which supports causing ignition" even including interruptions due to a faulty fuel pump or door lock. Simon, col. 4, lines 8-16.</p>	<p>is reached the host device is disabled."</p>	
<p>2(i) wherein the system that supports causing ignition includes only components not dedicated to directly causing a spark to initiate combustion.</p>	<p>The use of Activation Relay (13) to control an electrical device reads on controlling any electrical system of a vehicle, including any system not dedicated to directly causing a spark to initiate combustion.</p>	<p>See col. 4, lines 18-22 (Weigl PCT, page 8, lines 17-22), relating to reducing the maximum possible rotational speed of the motor or limiting the top speed. For clarification that speed limiting takes place in the ignition system, see also the Staerzl patent.</p>	<p>As represented in claim 1, Cut-Out Device 26 can be used to control electronic circuitry, and the Simon patent describes "control to be exercised over operation of a piece of equipment."</p>	<p>As explained above, Appliance Control Circuit 6f can consist of a relay used to cut off the power supplied to an appliance. Those of skill will recognize that such a relay can be used to control 12-volt DC power to a variety of systems within a vehicle.</p>